

Notice of Allowability

Application No.

10/692,353

Examiner

Minerva Rivero

Applicant(s)

KIMURA, TOHRU

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/23/03.
2. ☒ The allowed claim(s) is/are 1-32.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached.
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Allowable Subject Matter

2. Claims 1-32 allowed.

3. Regarding claims 1, 9, 18 and 25, Shimano *et al.* (US Patent 6,791,934) discloses an optical system for use in an optical pickup apparatus, comprising:

an expander lens including at least two lens groups and to convert a diameter of a light flux (Col. 6, Lines 11-12); and

an objective lens to converge the light flux from the expander lens (Col. 6, Lines 1-7).

However, Shimano *et al.*, alone or in combination with another reference, does not explicitly disclose nor fairly suggest:

wherein the following formula is satisfied:

$$W1_{CM} > W2_{CM}$$

where $W1_{CM}$ is a coma aberration (λ_{rms}) of a converged light spot when an off-axial light flux of a wavelength λ (nm) emitted so as to converge at a position distant in a vertical direction from the optical axis of the objective lens by an arbitrary distance $Y1$ (mm) not larger than 0.05 (mm) comes into the objective lens, and

$W2_{CM}$ is a coma aberration (λ_{rms}) of a converged spot when an off-axial light flux of the wavelength λ (nm) emitted so as to converge at a position distant in a vertical direction from the optical axis of the objective lens by the arbitrary distance $Y1$ (mm) comes through the expander lens into the objective lens on a condition that the optical axis of all lens groups constructing the expander lens is arranged so as to conform with the optical axis of the objective lens.

Therefore claims 1, 9, 18 and 25, and their dependent claims, 2-8, 10-17, 19-24 and 26-32, respectively, are allowed.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hirata (US 7,046,450) discloses a liquid-immersion objective optical system including a first and a second lens group.

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Sakuma (US 4,770,517) discloses a two-lens method for correcting a curvature of a field characteristic over a wide beam scanning angle.

Kimura *et al.* (US 6,876,501) disclose an optical pick-up apparatus having an objective lens formed by two lenses.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (571) 272-7626. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MR 9/13/06


WAYNE YOUNG
SUPERVISORY PATENT EXAMINER